1/2 031 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--EXPERIMENTAL PROOF OF THE EXISTENCE OF THE ANISOTROPY ON INDIRECT EXCHANGE INTERACTIONS IN HEXAFERRITES -U-

AUTHOR-(02)-BELOV, K.P., KOROLEVA, L.I.

COUNTRY OF INFO--USSR

SOURCE--FOZ. METAL. METALLOVED. 1970, 29(1), 180-2

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--FERRITE, MAGNETIZATION, ANISOTROPY, CRYSTAL LATTICE, CURIE POINT, ZINC COMPOUND, YTTRIUM, INTERMETALLIC COMPOUND, SPIN ORBIT COUPLING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0188 STEP NO--UR/0126/70/029/001/0180/0182

CIRC ACCESSION NO--AP0054984

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054984

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANISOTROPY CONST. FOR THE ZN SUB2 Y MATERIAL AS A FUNCTION OF TEMP. IS CALCD. FROM MAGNETIZATION MEASUREMENTS IN THE CURIE POINT (THETA) REGION, AND PARAMAGNETIC SUSCEPTIBILITY ABOVE THETA. IN THE CASE OF HEXAFERRITE CRYSTALS DIRECTIONS PARALLEL AND PERPENDICULAR TO THE C AXIS ARE NOT OF EQUAL IMPORTANCE FOR INDIRECT EXCHANGE, AND ANISOTROPY OF THE EXCHANGE INTERACTION WILL MAKE A SUBSTANTIAL CONTRIBUTION TO THE MAGNETIC ANISOTROPY ENERGY. BELOW THE CURIE POINT, AND POSSIBLY TO SOME EXTENT ABOVE IT, THERE ARE ALSO CONTRIBUTIONS FROM DIPOLAR AND SPIN ORBIT INTERACTIONS. REPLACING THE PB ION BY THE LARGER BA ION OR SMALLER SR ION RESULTS IN DISTORTION OF THE CRYSTAL LATTICE, WHICH CAN RESULT IN DEFORMATION OF THE ENERGY EXCHANGE OF THE CRYSTAL.

UNCLASSIFIED

USSR UDC 621.371

DMITRIYEV, V. I., KOROLEVA, K. P., SKUGAREVSKAYA, O. A., and FEDOROVA, E. A.

"Investigating the Electromagnetic Field of an Electric Dipole in the Presence of Powerful High-Resistance Layers in the Earth"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 6 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 6--collection of works) "Nauka," 1972, pp 40-44 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A388)

Translation: Computation of the field with powerful high-resistance layers in the earth involves a great deal of difficulty, caused by the need for computing integrals in the Hankel inverse transform. For this purpose, a calculating algorithm is developed by which the function under the integral sign is approximated in the low-frequency region with the required degree of accuracy. For the high-frequency region, where the required degree of accuracy cannot be attained, asymptotic formulas are obtained for making the calculations with the presence of the layers taken into account. Three illustrations, bibliography of two. N. S.

1/1

USSR UDC: 612.112.4.014.481.1

KOROLEVA, L. V., and TSYRAN, N. I., Division of Radiation Pathophysiology, Institute of Medical Radiology, Academy of Medical Sciences USSR, Obninsk

"The Effect of Leukocyte Factors in Intact and X-Ray-Irradiated Animals on Leukocyte Migration"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 12, Dec 70, pp 31-33

Abstract: Intradermal injection of rabbits and mice with leukocyte factors (lysosomes, granulocyte substance, and destroyed leukocytes) isolated from polymorphonuclear leukocytes in a peritoneal exudate from intact and X-ray-irradiated animals stimulated leukocyte migration within an hour, peaking after 9 hours. Lysosomes provoked the maximum migration, mainly in the papillary layer of the skin. The intensity of migration was considerably less in both rabbits and rats when the leukocyte factors were obtained from irradiated animals. The leukotactic effect of the polymorphonuclear leukocytes is apparently caused by the lysosome fraction. The weaker leukotactic activity of the preparations from the leukocytes of irradiated animals is further proof that irradiation causes qualitative changes in leukocytes.

1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--MODIFIED P TOLUENESULFONAMIDE,FORMALDEHYDE RESINS -U-

AUTHOR-(05)-MELNIKOVA, YE.P., KOROTKAYA, L.I., KHANIT, YA.A., KOROLEVA, N.G., TAGIEV, B.A.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 260,884

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970 47(4)

DATE PUBLISHED--06JAN70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--TOLUENE, SULFONAMIDE, FORMALDEHYDE, POLYCONDENSATION, CYCLOHEXANONE, CHEMICAL PATENT, PLASTIC PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1055 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0116521

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AA0116521
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HCHO RESINS ARE PREPD. BY COPOLYCONDENSATION OF HYDROXYMETHYL DERIVS. OF P TOLUENESULFONAMIDE, HCHO, AND A MODIFIER, SUCH AS CYCLOHEXANONE OR M SULFAMOYLBENZOIC ACID (I). FACILITY: INSTITUTE OF HIGH MOLECULAR WEIGHT COMPOUNDS, ACADEMY OF SCIENCES, U.S.S.R.

UNCLASSIFIED

2/2 037 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0130676

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE MAIN PROPERTIES OF SOLAR CELLS OBTAINED BY CREATING HOMOGENEOUS DIFFUSION P-N JUNCTIONS IN AN EPITAXIAL FILM OF GALLIUM ARSENIDE GROWN ON A GERMANIUM SINGLE CRYSTAL SUBSTRATE. IT IS SHOWN THAT THE DIFFUSION JUNCTIONS THUS OBTAINED EXHIBIT THE PROPERTIES OF HOMOGENEOUS DIFFUSION P-N JUNCTIONS IN SINGLE CRYSTAL GALLIUM ARSENIDE. ALTHOUGH DEFECTS LEADING TO SOMEWHAT LARGER LEAKAGE CURRENTS THAN ARE CHARACTERISTIC OF SINGLE CRYSTAL P-N JUNCTIONS ARE FOUND TO BE PRESENT IN THE BULK OF THESE FILM JUNCTIONS, IT IS CONCLUDED THAT THESE DEFECTS CAN BE PREVENTED BY PREDIFFUSION, LOW TEMPERATURE ANNEALING OF THE FILMS. FACILITY: VSESOIUZNYI NAUCHNO-ISSLEDOVATEL'SKII INSTITUT ISTOCHNIKOV TOKA, KISHINEV, MOLDAVIAN SSR.

UNCLASSIFIED

1/2 040 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--REDISTRIBUTION OF COMPONENTS IN SOLID SOLUTIONS STUDIED BY X RAY SPECTRAL MICROANALYSIS AND ELECTRON MICROSCOPY -U-

AUTHOR-(05)-KIYEVSKAYA, N.KH., KOPP, L.P., BRUK, A.T., NYRKOVSKAYA, V.V., KOROLEVA, N.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL METALLOVED. 1970, 29(2), 409-13

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ELECTRON MICROSCOPY, SOLID SOLUTION, TRACE ANALYSIS, CRYSTAL LATTICE, ALUMINUM ALLOY, IRON ALLOY, COPPER ALLOY, GRAIN BOUNDARY, SURFACE ENERGY, X RAY SPECTRUM, MOLYBDENUM CONTAINING ALLOY, TUNGSTEN CONTAINING ALLOY, TIN CONTAINING ALLOY, COPPER CONTAINING ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0324 STEP NO--UR/0126/70/029/002/0409/0413

CIRC ACCESSION NO--AP0126081

UNCLASSIFIED

2/2 040 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0126081

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING 6 ALLOYS WERE INVESTIGATED: FE PLUS 0.73PERCENT CU; FE PLUS 8.25PERCENT NO; FE PLUS 7.53PERCENT AL; CU PLUS 1.73PERCENT FE; CU PLUS 11.8PERCENT SN; AND AL PLUS 2.1PERCENT CU. THE SAMPLES WERE SUBJECTED TO HIGH TEMP. DIFFUSION ANNEALING, THEN TO SECONDARY ANNEALING AND QUENCHING. IN ALLOYS QUENCHED FROM THE HOMOGENEOUS REGION THE GRAIN BOUNDARIES ARE MARKEDLY ENRICHED WITH THE SECONDARY COMPONENT AS COMPARED TO THE INTERNAL VOL. OF THE GRAINS. THE EXTENT OF THIS ENRICHMENT, AS A RULE, INCREASES AS THE ALLOY IS CLOSER TO THE SOLY. LIMIT. THE CONCNS. OF THE COMPONENTS AT THE GRAIN BOUNDARIES IN THE ABSENCE OF PPTS. OF THE SECONDARY PHASE ALMOST ALWYAS WXCEEDS THE LIMITING SOLY. OF THE ELEMENT (WHEN FAR REMOVED FROM THE SOLY. LIMIT), THIS POINTS TO THE FORMATION OF AT. GROUPS ALONG THE GRAIN BOUNDARIES. THE NONREPRODUCIBILITY OF THE RESULTS ATTESTS TO THE NONUNIFORM DISTRIBUTION OF THE ELEMENT ALONG THE GRAIN BOUNDARIES. THE REASON FOR THIS MUST PROBABLY BE TRACED BACK TO THE DIFFERENCE IN THE MUTUAL ORIENTATION ANGLE OF THE CRYST. LATTICES AT VARIOUS POINTS OF THE TOUCHING GRAINS. WHEN THIS ANGLE IS 45DEGREES, THE FREE SURFACE ENERGY IS AT ITS MAX., AND THE POINT CONCN. OF THE ELEMENT IS THE MOST PROBABLE. ON THE OTHER HAND, AT THOSE POINTS WHERE THE ANGLE IS CLOSE TO 0 OR TO 90DEGREES, THE FREE SURFACE ENERGY IS AT ITS MIN. AN ATTEMPT IS MADE TO EXPLAIN THESE ANOMALIES.

FACILITY: SEV.-ZAPAD. ZAOCH. POLITEKH. INST., LENINGRAD, USSR.

UDC 621.374.4(088.8)

USSR

KURMAYEV, A. ZH., MIKHAYLOV, A. N., GEL'BSHTEYN, L. S., SLAVNEN, V. A., ODINTSOV, L. N., KOZLOV, A. I., KOROLEVA, R. A., STREL'NIKOV, A. [illegible]

"Pulse Repetition Rate Dividing Circuit"

USSR Author's Certificate No 277845, Filed 9 Jan 69, Published 20 Oct 70 (From RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G247P)

Translation: A frequency dividing circuit is proposed, which contains a cycle signal source, a square-wave source, a switch in the cycle signal circuit, a frequency divider and a comparison circuit. In order to improve the noise resistance of the cycle pulse time selection in the presence of low frequency noise, the device is also equipped with a pulse converter included between the divider and the comparison circuit. The converter output is connected to the control input of the switch in the cycle pulse circuit.

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1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SOLDER FOR SOLDERING ELECTRONIC EQUIPMENT -U-

AUTHOR-(05)-TUTOVSKAYA, N.N., KOROLEVA, S.P., YUSHKINA, YE.I., PODVIGINA, O.P., CHERNOV, O.V.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,139
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--CHEMICAL PATENT, ELECTRONIC EQUIPMENT, SOLDER, CHEMICAL COMPOSITION, COPPER, NICKEL, GERMANIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1829 STEP NO--UR/0482/70/000/000/0033/0000

CIRC ACCESSION NO--AA0132094

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--20NOV7C
CIRC ACCESSION NO--AA0132004
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE SOLDER, BASED ON CU, ALSO CONTAINS GE 1-5 AND NI 1-3PERCENT.

UNCLASSIFIED

USSR

UDC 539.12.08

KEIRIM-MARKUS, I. B., KOROLEVA, T. V., KRAYTOR, S. N., and USPENSKIY, L. N.

"The Characteristics of the DINA Personal Neutron Track Dosimeter"

Moscow, Atomnaya Energiya, Vol 34, No 1, Jan 73, pp 11-15

Abstract: The characteristics of the DINA personal neutron dosimeter, consisting of track detectors of fission fragments from Np^{237} beyond a 0.1 g/cm^2 B^{10} filter and U^{235}, are investigated. They include the sensitivity of the dosimeter, its reading dependences on the distance from the human body surface and the radiation incidence angle, and the influence of the neutron spectrum on the track level. The characteristics of the DINA personal neutron track dosimeter are shown for five types of neutron spectra and dosimeter locations. The average value of the track level, 2.3 mrad/track·mg Np^{237}, has a dispersion of ±6% and is shown to correspond to the calculated value of 2.2 mrad/track·mg Np^{237}. Four figures, two tables, six formulas, fourteen bibliographic references.

1/1

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--LONG ACTING STREPTOMYCIN -U-

AUTHOR--(04)-GOLUBEV, V.N., KOROLEVA, V.G., VASILYEV, V.K., LAZAREVA, YE.N.

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 6, PP 491-494

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BENZENE DERIVATIVE, ETHYLENEDIAMINE, STREPTOMYCIN, SULFATE, BLOOD CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1833 STEP NO--UR/0297/70/015/006/0491/0494

CIRC ACCESSION NO--AP0125444

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201510009-1"

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125444
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.
1,3,DIBENZYL,2,STREPTOMYCINIMIDAZOLIDIN SULFATE, A CONDENSATION PRODUCT OF STREPTOMYCIN WITH N, N PRIMEL,DIBENZYLETHYLENDIAMINE WAS STUDIED IN VITRO AND IN VIVO. ON INTRAMUSCULAR ADMINISTRATION OF A WATER SUSPENSION OF STREPTOIMIDOZOLIDIN (PARTICLES OF NOT MORE THAN 30 MICRONS) TO DOGS IN DOSES OF 20000 OR 40000 MU G-KG, THE DRUG WAS ABSORBED TO BLOOD AT A LOWER RATE AND PROVIDED LOWER LEVELS DURING THE FIRST HOURST OF OBSERVATION AS COMPARED TO STREPTOMYCIN, WHILE THE BLOOD LEVELS IN 3, 5, 8, 12 HOURS WERE MUCH HIGHER. MINOR CONCENTRATION OF STREPTOIMIDAZOLIDIN WERE DETECTED UP TO 72 HOURS AFTER THE ADMINISTRATION. THE NEW DERIVATIVE DID NOT SIGNIFICANTLY DIFFER FROM STREPTOMYCIN BY THE GENERAL ANTIBACTERIAL SPECTRUM IN VITRO AND THE BASIC PHARACOLOGICAL CHARACTERISTICS. FACILITY: NATIONAL INSTITUTE FOR ANTIBIOTICS, MOSCOW.

UNCLASSIFIED

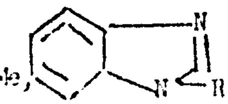
USSR UDC 547.781.5.785.5

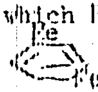
FILIPSKIKH, T. P., POZHARSKIY, A. F., KOROLEVA, V. N., SIMONOV, A. M., and ZVEZDINA, E. A., Rostov State University, Rostov-on-Don

"Derivatives of Imidazole Containing Potentially Labile Groups at the N_1 Atom. VI. Some 2-Amino Derivatives of 1-Aralkyl- and 1-Methoxymethylbenzimidazoles"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 72, pp 809-811

Abstract: By reacting benzimidazole with substituted benzyl chlorides and the Ag salt of benzimidazole with benzhydrylchloride, 1-aralkylbenzimidazoles



(I) were obtained, in which R = -CH2  Me, -CH2  CHMe2, -CH2  Me, Me, -CHPh2. By the action of $NaNH_2$ on compounds I, an amino group was introduced in position 2 of the benzimidazole nucleus. In this manner, the 1-aralkyl-2-aminobenzimidazoles (II) derived from I were synthesized. By reacting the Na salt of 2-aminobenzimidazole with methoxymethyl chloride, 1-methoxymethyl-2-aminobenzimidazole (III) was prepared. Compounds II-III were required for the generation of highly reactive 2-aminobenzimidazole anions by the reductive cleavage of the N-R bond with Na in liquid NH_3.

1/1

USSR

UDC 619:616--002.828--07(084)

SARKISOV, A. Kh., KOROLEVA, V. P., KVASHNINA, Ye. S., and GREZIN, V. F.
Diagnostika Gribnykh Bolezney (Mikozov i Mikotoksikozov) Zhivotnykh
(Diagnosis of Fungal Diseases -- Mycosis and Mycotoxicosis -- in Animals)

Moscow, "Kolos," 1971, 144 pp

Translation: Annotation: All types of fungal diseases found in farm animals are represented in this handbook. The agents of diseases are shown, laboratory diagnosis of pathogenic and toxic fungi are listed, and the clinical traits of the diseases and the pathological-anatomical changes they cause in animal organisms are given. The publication has more than 200 original illustrations.

The handbook is designed for veterinary specialists at kolkhozes and sovkhozes, workers at veterinary hospitals and laboratories, scientific workers, and students in the veterinary schools of institutes.

It is requested that suggestions and remarks be sent to: Moscow, Zh-472, VIEV, Laboratory of Antibiotics and Mycology.

Table of Contents:

1/4

USSR

SARKISOV, A. Kh. et al., "Kolos," 1971, 144 pp

USSR

SARKISOV, A. Kh., et al., "Kolos," 1971, 144 pp

3/4

USSR

SARKISOV, A. Kh., et al., "Kolos," 1971, 144 pp

4/4

KOROLEVA, YE. B.

JPRS 61321 26 Feb 74

PRODUCTION OF SPHERICAL AND FINELY DISPERSED POWDERS IN LOW-TEMPERATURE PLASMA

[Article by N. N. Rykalin, V. A. Petrunichev, I. D. Kulagin, L. M. Sorokin, Ye. B. Koroleva, A. B. Gugnyak; Moscow, Plazmennyye Protsessy v Metallurgii i Tekhnologii Neorganicheskikh Materialov, Russian, 1973, pp 220-230]

Low-temperature plasma, generated in an arc or induction discharge, is an effective means of solving problems of producing refractory powders with spherical particles and ultradispersed powders with high specific area. The range of application of such powders is steadily expanding. Applications include various types of filters, cathodes for vacuum tubes, emitters, dispersion hardeners for alloys, fillers for plastics, pigments, carbon black, propellant components and many other products. During the last decade certain organizations of the Soviet Union have developed and investigated new plasma methods for producing such powders and the corresponding apparatus.

Some of the developments have found successful application in industry, particularly in new technology, or are undergoing experimental-industrial tests.

The results of investigations conducted by the Institute of Metallurgy im. A. A. Baykov, Academy of Sciences USSR, using both arc and induction discharge plasma, are presented in this article. At the present time it is still difficult to delineate the range of efficient utilization of these types of plasma heating in connection with their features, which may turn out to be advantageous for the solution of specific problems.

Production of Spherical Particles in Arc Plasma

The process of plasma spheroidization annealing of materials may be represented in general form as consisting of the following stages: 1) melting and spraying of treated material, 2) rounding of molten particles, 3) hardening and cooling of particles. The starting material may be inserted in the plasma jet in the form of powder or wire (rods).

(4)

The method of injection of the material with a positive potential applied to it from a power source is used for sputtering wire or electrically conducting rods. In this case the anode spot is played upon the end of the wire or rod to ensure maximum process productivity. Spheroidizing of powder and nonconducting materials is done in an independent plasma jet.

Sputtering of Wire

This process is done in the same way as plasma spraying and may be accomplished with the same equipment. Conducting wire is heated and sputtered with the heat of the arc or joule heat released during ejection of the wire [1, 2]. By analogy with the fusion of welding electrodes, the growth of the liquid droplet of the metal that forms on the end of the wire is an exponential function of time [1]. However the lifetime of the droplet is substantially shorter here, since considerable forces act on the droplet from the direction of the strong gas flow, heated to a high temperature.

When the forces acting on the droplet from the jet (mechanical force of the gas, pressure of the arc, etc.) and its own weight exceed the surface tension that holds it on the end of the wire, the droplet separates, acquiring an arbitrary outline. Traveling at high speed in the hot gas stream, the liquid particle becomes rounded under the influence of surface tension, and then it cools and solidifies in the normal temperature zone. The spheroidizing time t_s of the droplet (according to an approximate model of contraction of arbitrary geometric shapes with maximum dimension R into a sphere with radius r) may be found from the condition $\delta A = \alpha(\int dF - \int df)$ and expressed through the equation

[c-s]
$$t_s = (R/2 - r)\sqrt{2\alpha(F - f)/m}, \quad (1)$$

where δA is the change of a free shape with area F to a spherical shape with area f, α is the surface tension coefficient, and m is the mass of the particles.

This time comprises thousandths and hundredths of a second and is substantially shorter than the time of solidification and cooling of the particles. Tests show that tungsten and molybdenum particles measuring larger than 100 μ retain their capacity for deformation on impact with water for a distance of 300-400 mm. This must be taken into account in the design of equipment for making spherical particles. In the UPSP-2 apparatus (designed by IMET [Institut metallurgii im. A. A. Baykova; Institute of Metallurgy im. A. A. Baykov]) the chamber height is about 1.5 m, which ensures reliable spheroidizing of particles up to 1 mm in diameter without deformation when collected in water.

The complex set of forces that act upon a liquid droplet during sputtering and the possibility of coagulation and breakup of droplets in flight result in considerable scattering of particles in terms of dimensions. For each combination of mode parameters, however, it is

USSR

UDC 595.422

KOROLEVA, YE. V., Institute of Zoology, Academy of Sciences USSR, Leningrad

"Neopodocinum mrciaki Sellnick, 1968 (Gamasoidea, Macrochelidae), a Species of Gamaside Tick New for the Fauna of the USSR"

Leningrad, Entomologicheskoye Obozreniye, Vol 50, No 2, 1971, pp 462-468

Abstract: In 1968 M. Sellnick (Folia Parasitologica, 15, 3, 253-262) described ticks of the formerly unknown species Neopodocinum mrciaki, which he discovered in Slovakia in the upper reaches of the river Var. In 1969 an expedition of the Institute of Zoology, Academy of Sciences USSR, collected specimens of ticks of the genus Neopodicinum from rodents, insectivores, their nests, and the earth in the vicinity of the nests in the Transcarpathian region of the USSR. These ticks were later found to belong to the species N. mrciaki discovered by Sellnick. In view of the fact that this species was not known to occur in the USSR and because information on it is absent in the Russian literature, a description of all developmental phases of ticks of this species (female, male, deutonymph, protonymph, and larva) is given. The description is accompanied by figures. A description of larvae is included, which was not given by Sellnick, because specimens of larvae were not available to him. 1/1

USSR

UDC 621.791.753.042.4:669.018.45:539.434

LOZITSKIY, L. P., Doctor of Technical Sciences, BEREZHEV, V. F., Engineer, IVANENKO, A. A., Candidate of Technical Sciences, KOROLEVA, Z. G., Candidate of Technical Sciences, MUSIYENKO, B. I., Engineer, and MOLOCHKOV, M. A., Candidate of Technical Sciences, Kiev Institute of Civil Aviation Engineers

"Thermal Fatigue Resistance of Welded Joints of EP99 Alloy Performed with Electrodes of Different Marks" (Reported at the All-Union Conference "Estimate of the Supporting Power of Materials and Welded Joints According to Breakdown Mechanics," Kiev, Dec 72)

Kiev, Avtomaticheskaya Svarka, No 1(250), Jan 74, pp 39-42

Abstract: An experimental study was made of the effects of heating temperature and thermal cycling on the depth of thermal fatigue cracks and the mechanical properties of welded joints of EP99 alloy welded with NIAT-8 and NIAT-7 electrodes. The parameters characterizing the injuriousness of the specimens in the process of thermal fatigue tests are the depth of cracks, their growing rate, and changes in residual strength, plasticity, and structure. The results are discussed by reference to diagrams showing the depth of crack dependence on maximum cycling temperature and on the quantity of thermal

1/2

USSR

LOZITSKIY, I. P., et al., Avtomaticheskaya Svarka, No 1(250), Jan 74, pp 39-42

cycling and the residual strength and relative narrowing dependences on the maximum temperature after 2000 heat cycles. Specimens welded with NIAT-8 electrodes possessed higher thermal fatigue strength in comparison with specimens welded with NIAT-7 electrodes. The increased Cr content (up to 21%) of the joint welded with the NIAT-7 electrode resulted in decreased thermal fatigue strength of the welded specimen. Four figures, two tables, two bibliographic references.

2/2

UDC 539.376:66-974

USSR

STEPANOV, G. A., BURTSEV, YE. I., and KOROLIKHINA, R. A.

"Creep of Kh14G14N3T Steel in Liquid Nitrogen"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 4-7

Abstract: The accumulation of plastic flow of Kh14G14N3T steel with a composition of 0.07% C, 0.46% Si, 0.006% S, 0.017% P, 13.4% M, 13.8% Cr, 3.05% Ni, and 0.25% Ti at -196° C was investigated under conditions of prolonged loading. Its properties in the presence of stress concentrators and heat-cooling cycles were also considered. The results of the tests shown that Kh14G14N3T can be recommended for statically loaded welded structural elements which must operate for a long time at low temperatures.

1/1

USSR UDC: [537.226+537.311.33]:[537+535]

DOVGIY, Ya. O., BRILINS'KIY, M. I., and KOROLISHIN, V. M.

"Polarization Shift of the Absorption Edge in α-HgS"

Fiz. elektronika, Resp. mizhvid. nauk.-tekhn. zb. (Physical Electronics, Interdepartmental Scientific-Technical Collection, Ukrainian Republic--collection of works) No. 2, 1970, pp 37-41 (from RZh-Fizika, No. 11, 1971, Abstract No. 11E1171)

Translation: At temperatures of 300 and 80° K, the polarization shift of the natural absorption edge for α-HgS monocrystals cut parallel to the c-axis was measured. On the basis of theoretical and group analysis, a possible variant of the zonal system of α-HgS is presented and the rules of selection for zone-zones transitions at point Γ of the Brillouin zone are defined. The amount of the polarization shift then corresponds to the energy gap between the valence subzones Γ_4 and $\{\Gamma_5 + \Gamma_6\}$ arising as a result of the spin-orbital interaction. It is expected, from the selection rules, that the optically active absorption band in the infrared region of the spectrum can be observed only when $\vec{E} \perp c$. Author's abstract

1/1

USSR UDC: 535.376

GOL'DMAN, A. G., KOROL'KO, B. N., LYSENKO, V. F., and STEPANCHENKO, E. S.

"Effect of Cobalt on the Electroluminescence of ZnS-Cu and the Infrared Electroluminescence of CdS-Cu, Co"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol. 13, No. 3, September 1970, pp 464-467

Abstract: In this short article, the authors report an increase in the number of electrons in traps to a depth of 0.2-0.4 ev in the electroluminophores ZnS-Cu by the introduction of small quantities of cobalt, at a concentration of 10^{-6} g-atoms per g-mole of ZnS, with a consequent increase in the intensity of their emitted phosphorescence. They found also that a somewhat larger amount of cobalt added to CdS also increased the electron concentration in the traps and led to a maximum infrared electroluminescence at 0.8 μ. Their specimens of ZnS and CdS were activated by copper from a

USSR

KAZANSKAYA, N. A., et al., Optika i Spektroskopiya, Vol 28, No 6, Jun 70, pp 1150-1158

$\frac{k_t}{\int_0}$. There was found to be a correlation between long-wave displacement of the absorption band of Tb^{3+} $^7F_6 \rightarrow {}^5D_4$ in the complexes, corresponding to growth of covalency of the oxygen-rare earth ion bond, and the value of $\frac{k_t}{\int_0}$. It is shown that the absence of luminescence in a number of Eu^{3+} and Sm^{3+} complexes is due to the appearance of a new long-wave absorption band -- a band of electron transfer from the organic part to a rare earth ion, with reduction of the latter to a doubly charged state.

2/2

USSR

Aluminum and Its Alloys

USSR UDC 669.71:539.4.014.2

DRITS, M. YE., KOROL'KOV, A. M., CUK, YU. P., GERASIMOVA, L. P., and PETROVA, E. N.

"Fracture of Aluminum Alloys Under Tensile Stresses"

Moscow, Razrusheniye Alyuminiyevyekh Splavov Pri Rastyagivayushchikh Napryazheniyakh, Izd-vo Nauka, 1973, 215 pp

Translation of Introduction: Aluminum alloys are finding ever increasing use in contemporary technology. Possessing sufficiently high specific strength, good corrosion resistance, and technological properties, aluminum alloys in many fields of technology are competing with steels.

Use of high-strength aluminum alloys in large-scale heavily stressed structures operating under conditions of tensile stress actions has led to the appearance of cases of fracture under loads notably smaller than the computed yield stress of the alloys. This is causing increased interest in studying the processes of fracture of aluminum alloys.

1/7

USSR

DRITS, M. YE. et al, Razrusheniye Alyuminiyevykh Splavov Pri Rastyagivayushchikh Napryazheniyakh, Izd-vo Nauka, 1973, 215 pp

A large amount of research by domestic and foreign investigators is being devoted to the problem of fracturing of metals and alloys at the present time. Considerable attention is being paid to theoretical investigations of questions involving the mechanics of fracture. Much less research has been devoted to investigating the influence of structure and composition of materials on the processes of fracture development. However, it is precisely this question which has significance both in the development of compositions of new alloys and the technology of their production and in ensuring reliability and longevity of structures from existing and newly created alloys.

Therefore the basic problem of the present research was the study of laws governing the fracture of complexly alloyed aluminum alloys and especially the establishment of the influence of

USSR

DRITS, M. YE. et al, Razrusheniye Alyuminiyevykh Splavov Pri Rastyagivayushchikh Napryazheniyakh, Izd-vo Nauka, 1973, 215 pp

structural factors which facilitate the premature generation and development of cracks in them under the effect of tensile stresses. This permits evaluating the influence of structural features of alloys on the structural strength of finished products and selecting ways for increasing the efficiency of alloys under conditions of exploitation, and also predicting the behavior of newly developed aluminum alloys under conditions of tensile stress actions.

Thanks to the series of devices developed at the Institute of Science of Machines of the Academy of Sciences USSR under the direction of Doctor of Technical Sciences Professor N. G. Lozinskiy such as the IMASH-5, IMASH-9, IMASH-10, etcetera, the possibility has arisen for the development of new directions in the investigation of microstructure and properties of metals and alloys, which permit establishing the interrelationship between

USSR

DRITS, M. YE. et al, Razrusheniye Alyuminiyevykh Splavov Pri Rastyagivayushchikh Napryazheniyakh, Izd-vo Nauka, 1973, 215 pp

changes in structure and applied stresses under different loading schemes in a wide range of temperatures of the investigation.

This method of investigation is the most effective for solving the problem posed and was taken as the basis for carrying out the present investigations.

The authors wish to thank V. M. Afonina and T. R. Matyukhina for help in conducting the experiments.

CONTENTS

4/7

USSR

DRITS, M. YE. et al, Razrusheniye Alyuminiyevykh Splavov Pri Rastyagivayushchikh Napryazheniyakh, Izd-vo Nauka, 1973, 215 pp

USSR

DRITS, M. YE. et al, Razrusheniye Alyuminiyevykh Splavov Pri Rastyagivayushchikh Napryazheniyakh, Izd-vo Nauka, 1973, 215 pp

6/7

USSR

DRITS, M. YE. et al, Razrusheniye Alyuminiyevykh Splavov Pri Rastyagivayushchikh Napryazheniyakh, Izd-vo Nauka, 1973, 215 pp

7/7

USSR

UDC 669.715'782'721:620.178.74

KOROL'KOV, A. M., PETROVA, E. N., FAYGELSON, B. YU.

"Estimating the Inclination of Cast Aluminum Alloys Toward Brittle Fracture when Testing for Impact Bending"

V sb. Struktura i svoystva lekg. splavov (Structure and Properties of Light Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 88-90 (from RZh-Metallurgiya, No 4, Apr 72, Abstract 41632)

Translation: A study was made of specimens of the Menage type made from A14 aluminum alloys of the Al-Si system and A127-1 aluminum alloy of the Al-Mg system during impact bending on the PSVO-1000 impact tester with oscillographic recording. The work of nucleation of the cracks A_n and the work of propagation of the cracks A_p were determined as functions of the test temperature. The work of destruction of the specimens manufactured from the same alloys with a notch terminating in a fatigue crack during impact bending was determined in parallel. It was demonstrated that the work of fracture in both cases is much less than the impact toughness and although an identical tendency is observed toward variation of both characteristics as a function of the alloy composition, there is no direct correlation. For both alloys, both A_n and A_p drop with a reduction in temperature. A_p drops especially sharply for AL27-1 by comparison with AL4.

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USSR

KOROL'KOV, A. M., et al., Struktura i svoystva lekg. splavov, Moscow, Nauka, Press, 1971, pp 88-90

This indicates strong embrittlement of the former. The application of the indicated method permits qualitative estimation of the inclination of the cast aluminum alloys toward brittle fracture when testing for impact bending with respect to A_n and A_p. Three illustrations, 1 table, and a 4-entry bibliography.

2/2

·USSR·

UDC 669.715:541.412:539.42

DRITS, M. YE., KOROL'KOV, A. M., GUK, YU. P., GERASIMOVA, L. P.

"Effect of Intermetallic Phases on the Generation of Microcracks in Binary Aluminum Alloys"

V sb. Struktura i svoystva legk. splavov (Structure and Properties of Light Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 91-95 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 41628)

Translation: A study was made of the effect of intermetallic phases formed in alloying aluminum with elements of the transition groups on the generation and development of microcracks at 300° under the conditions of uniaxial extension. When estimating the effect of the excess intermetallic phase formed in the alloy on the alloy properties, not only the magnitude and nature of the intermetallic particles but also the type of diagram of state by which they are crystallized has great significance. The particles of the primary intermetallic phases formed in systems crystallizing with respect to the peritectic type fracture brittly under very low stresses and serve as a source of incipient cracks. In systems crystallized by the eutectic type, the particles of the eutectic segregations are not destroyed during deformation, and the particles of the primary intermetallic phases in the transeutectic alloys are less inclined toward brittle fracture than the primary intermetallic phases in the pereutectic systems. It

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USSR

DRITS, M. YE., et al., Struktura i svoystva legk. splavov, Moscow, Nauka Press, 1971, pp 91-95

is proposed that the formation of surface defects in particles during peritectic reaction promotes brittle fracture of the primary intermetallic phases in systems crystallized by the peritectic type. Three illustrations, 1 table, and an 8-entry bibliography.

2/2

USSR UDC 669.018.672.004.12;620.183+669.2/8.004.12

KOROL'KOV, A. M., Editor in Chief

Struktura i svoystva legkikh splavov (Structure and Properties of Light Alloys), Moscow, "Nauka" Press, 1971, 150 p., illustrations, tables, graphs, bibliographic references, 2100 copies printed.

Translation of Foreward: This collection of articles was prepared for publication in connection with the sixtieth birthday of M. Ye. Drits, professor, doctor of technical science, and prominent researcher engaged in studies on light alloys based on magnesium, aluminum, and other metals. Interest in this type of research has been steadily increasing. The newly developed alloys have shown good workability and high mechanical properties at room and higher temperatures. Some of these alloys feature specific properties. New, advanced methods of melting, casting, metal working by pressure, and heat treatment have been devised and adopted by industry. This collection comprises the results of research in light alloys performed in recent years. Part one includes studies on phase diagrams of alloys and composition-property curves. The materials discussed here are largely alloys with rare-earth metals. Part two presents articles dealing with characteristics of solid-state transformation in light alloys, primarily solid solution decay and recrystallization, as well as with changes in various properties of the alloys during these trans-

1/8

USSR

KOROL'KOV, A. M., Structure and Properties of Light Alloys, Moscow, "Nauka" Press, 1971

tions. The third part contains articles presenting the results of new studies of light alloys dealing with the effect of additional alloying, casting, and subsequent treatment on the structure and properties of light alloys.

TABLE OF CONTENTS 141

2/8

USSR

KOROL'KOV, A. M., Struktura i svoystva legkikh splavov, Moscow, "Nauka" Press, 1971.

USSR

KOROL'KOV, A. M., Struktura i svoystva legkikh splavov, Moscow, "Nauka" Press, 1971.

4/8

USSR

KOROL'KOV, A. M., Struktura i svoystva legkikh splavov, Moscow "Nauka" Press, 1971.

USSR

KOROL'KOV, A. M., Struktura i svoystva legkikh splavov, Moscow "Nauka" Press, 1971.

PART THREE. Effect of Alloying, Casting Conditions and Treatment on the Properties of Alloys of Light Metals

6/8

USSR

KOROL'KOV, A. M., Struktura i svoystva legkikh splavov, Moscow "Nauka" Press, 1971.

USSR

KOROL'KOV, A. M., Struktura i svoystva legkikh splavov, Moscow "Nauka" Press, 1971.

References follow each article.

- END -

C30: 1842-W

8/8

Mechanical Properties

USSR

UDC 620.17:669.71'721

PETROVA, E. N., GERASIMOVA, L. P., and KOROL'KOV, A. M.

"Properties of the Alloy Al-9.5% Mg with Titanium, Zirconium, Molybdenum, and Boron under Tension and Impact Loadings"

Moscow, Metallovedeniye, No 5, 1971, pp 6-8

Abstract: The effect of the alloying elements Ti, Zr, Mo, and B on the mechanical properties and structure of the alloy Al-9.5% Mg was investigated under tension and impact loading conditions. The source of the increased tendency of Al-Mg alloys to formation of cracks was studied on the IMASh-58-65 installation of the Institute of Machine Studies. Introduction of the additions in quantities of 0.05-0.1% increases the impact ductility. Additions in quantities of 0.5% bring about a sharp decrease of the impact ductility. These relations comply with the resistance to rupture by tension, as determined by the character and distribution of surplus phases. One figure, one table, three bibliographic references.

1/1

USSR

UDC 669.35'296

KOROL'KOV, A. M. and GUROVA, L. M. (Moscow)

"The Influence of Rare Earth Metals on the Structure and Heat Resistance of Copper and Copper-Zirconium Alloys"

Moscow, Izvestiya AN SSSR, Metally, No 3, May-Jun 70, pp 165-170

Abstract: The influence of certain rare earth metals (La, Ce, Pr, Nd and Y), for which the structural diagrams with copper are available, on the heat resistance of copper and copper-zirconium alloys is studied. The preparation of binary copper rare earth metal alloys is described. The heat resistance of binary alloys at 400°C was determined by the method of continuous hardness and plotted in the form of a "composition-continuous hardness" diagram. The increased heat resistance in copper with the addition of rare earth metals is produced both by the formation of the solid solution and by the presence of metal compounds of the Cu_6Me type, which are more heat-resistant than copper. An analysis of the results shows: 1) the influence of yttrium, cerium, and praseodymium on copper at 400° is more important than that of lanthanum and neodymium; 2) at 400°C the Cu-Zr alloys with 2.5-3% Zr are the most heat resistant; 3) the Cu-Zr-Ce and Cu-Zr-Y alloys at high electric conductivity (80-85% of copper electric conductivity) have the same heat resistance at 400°C (12-13 kg/mm^2) and 4) the Cu-0.8-1.2%-Zr-0.7-0.85% Ce alloy, which can be easily processed by pressure, may be recommended as a conducting heat resistant alloy.

1/1

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--RAMAN EFFECT IN A SODIUM CHLORIDE CRYSTAL AT A LOW TEMPERATURE -U-

AUTHOR-(02)-STEKHANOV, A.I., KOROLKOV, A.P.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1076-9

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SODIUM CHLORIDE, CRYSTAL, LOW TEMPERATURE PROPERTY, RAMAN SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0927 STEP NO--UR/0181/70/000/004/1076/1079

CIRC ACCESSION NO--AP0121529

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121529

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RAMAN SPECTRUM OF THE 2ND ORDER WAS INVESTIGATED OF NACL CRYSTAL AT 90DEGREESK. SCATTERING WAS EXCITED WITH THE RESONANCE LINE OF HG 2536.5 ANGSTROM AND THE SPECTRUM WAS RECORDED PHOTOGRAPHICALLY. IN COMPARISON WITH THE SPECTRUM AT 300DEGREESK A SHIFT WAS OBSD. OF THE FREQUENCIES OF INTENSITY MAX. AND THE VARIATION OF THE RELATIVE INTENSITY OF VARIOUS SECTIONS OF THE SPECTRUM. COMPARISON WAS MADE WITH THEORETICAL 2-PHONON D. OF STATES.

FACILITY: FIZ. TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

UDC: 539.1.073/.074

USSR

VLADIMIRSKIY, V. V., KOROL'KOV, I. Ya., NOVIKOVA, N. V., and NOZDRACHEV, V. N.

"A Method of Filmless Information Recording From Wire Spark Chambers in a Strong Magnetic Field"

Moscow, Pribory i Tekhnika Eksperimenta, No 5, 1973, pp 55-56

Abstract: The basic idea of this method is the recording of ultrasonic oscillations arising from the interaction of a current induced in a sonic conductor with an external magnetic field. The present article explores the use of the electrodynamic method, with an intense magnetic field, in the filmless information recording system, based on this idea, involving wire spark chambers with ferrite and magnetostriction information recording. The exploration was first conducted with models and then on a mock-up of the wire spark chamber measuring 1200X650 mm^2, filled with a Ne+He mixture, in a magnetic field with an induction of 18 kilogauss. This method was found to have a high sensitivity and is capable of use with magnetic fields stronger than 1 kilooersted, a field intensity at which other methods are ineffective.

1/1

(18)

USSR

BALOSHIN, O. N., BLAGORODOV, A. N., BOLONKIN, B. V., VLADIMIRSKIY, V. V., GORIN, YU. P., GRIGOR'YEV, V. K., GRISHIN, A. P., YEROFEYEV, I. A., KOROL'KOV, I. YA., LUZIN, V. N., MILLER, V. V., NIKOLAYEVSKIY, YE. S., PETRUKHIN, V. N., PLIGIN, YU. S., PONOMAREV, L. A., SIROTKIN, S. M., SOKOLOVSKIY, V. V., TARASOV, YE. K., TIKHOMIROV, G. D., TROSTINA, K. A., TURCHANOVICH, L. K., and SHKURENKO, YU. P., Institute of Theoretical and Experimental Physics GKI AE (State Committee for the Use of Atomic Energy)

"The $K^- p \rightarrow \bar{K}^0 n$ Charge Exchange Reaction at a Pulse of 39 Gev/sec"

Moscow, Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544

Abstract: The authors present the measurement results from studying the charge exchange reaction of K^--mesons on protons ($K^- p \rightarrow \bar{K}^0 n$) at a pulse of 39 Gev/sec. The study was carried out using the ITEF 6-m magnetic track spectrometer. The working volume of the magnetic field of the spectrometer was 1.0 x 1.5 x 6 m. Twelve optical spark chambers were located inside the magnet, with each chamber having eight spark gaps (10 mm each). The chamber electrodes consisted of two layers of aluminum foil 14 microns thick. The photographs were taken through a special slit in the magnet yoke. A mirror system made it possible to obtain three stereoprojections of all of the chambers

1/2

(18)

USSR

BALOSHIN, O. N., et al., Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544

with one camera. The reaction was studied on the negative particle beam of the IFVE accelerator. The K^--mesons were distinguished by a differential Cerenkov counter. The beam was focused on a liquid hydrogen target 40 cm long which was set approximately three meters from the first chamber of the spectrometer. Approximately $5 \cdot 10^7$ K^--mesons were passed through the equipment and 1020 photographs taken. Pairs of uniformly charged tracks were measured on the photographs. The measurement results were then processed on the Razdan-3 computer. Only 270 intersecting tracks were found. A graph is given for the differential cross section of the reaction. The results show that the cross section value of 7.4 ± 1.2 microbarns obtained by the authors in comparison to data obtained for lower energies elsewhere shows the logarithmic dependence of the charge exchange cross section on the pulse, equal to -1.58 ± 0.05. The authors thank K. G. Boreskov, A. M. Lapidus, S. T. Sukhorukov, and K. A. Ter-Martirosyan for their presentation of the computational results as the dependence of the differential cross section onpulse transfer (do/dt). This dependence is compared with predictions of the Regge pole model.

1/1

UNCLASSIFIED PROCESSING DATE--13NOV70

1/2 023

TITLE--HARDENING OF ORGANOSILICON RESINS -U-

AUTHOR-(05)-OSIPCHIK, V.S., AKUTIN, M.S., VLASOV, A.S., MNATSAKANYAN, V.G., KOROLKOV, K.S.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,446

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970

DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, SILICON COMPOUND, PLASTIC MECHANICAL PROPERTY, SCILICONE RESIN, ORGANOSILICON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1419 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128818

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 023

CIRC ACCESSION NO--AA0128816

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SILICON COMPDS. WERE USED TO HARDEN ORGANOSILICON RESINS. TO IMPROVE THE PHYSICOMECH. PROPERTIES OF THE HARDENED PRODUCTS, 0.25-10 WT. PERCENT SIO WAS USED.

FACILITY: MENDELEEV, D. I., CHEMICAL TECHNOLOGICAL INSTITUTE, MOSCOW.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--DYNAMICS OF DL,CIS,PINONIC ACID SORPTION ON ANION EXCHANGERS -U-

AUTHOR-(03)-KOROLKOV, N.M., AVOTINS, F., SILINA, A.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 38-46

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ANION EXCHANGE RESIN, FLUIDIZED BED, ISOTHERM, MASS TRANSFER, CALCULATION/(U)AV17 ION EXCHANGE RESIN, (U)EDELOP ION EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0678 STEP NO--UR/0464/70/000/001/0038/0046

CIRC ACCESSION NO--AP0119586

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119586

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DYNAMICS WERE STUDIED ON ANION EXCHANGERS AV-17 AND EDE-10P IN FIXED AND FLUIDIZED BEDS. IN THE CASE OF CONVEX ISOTHERMS A STEADY STATE SORPTION FRONT IS FORMED. THE EQUATIONS FOR THE DYNAMICS OF SORPTION IN A FIXED BED ARE VALID ALSO FOR A FLUIDIZED BED. EQUATIONS ARE GIVEN FOR CALCG. THE MASS TRANSFER COEFF. FACILITY: RZH. POLITEKH. INST., RIGA, USSR.

UNCLASSIFIED

UDC: 621.396.6-181.5

USSR

KOROL'KOV, N. V., MARYSHEVA, G. I., MAMATOV, Yu. A., TSAGARELI, D. V.

"Thin Ferromagnetic Films. (Some Problems of Magnetization)"

Tonkiye ferromagnitnyye plenki. (Nekotoryye voprosy namagnichivaniya) (cf. English above), AN SSSR, Vychisl. tsentr, Moscow, 1970, 59 pp, ill. 20 k. (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V264 K)

Translation: The paper is made up of five sections: characteristics of actual thin magnetic films, stability conditions and complete recording of information on a thin cylindrical magnetic film with longitudinal preferred axis of magnetization, magnetizing a thin magnetic film, investigation of the dissipation flux of cylindrical magnetic films on an electric model, and the process of energy transmission during magnetic reversal of a thin magnetic film by rotation. I. M.

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USSR

KOROL'KOV, N. V., and TSAGARELI, D. V.

"Energy Transfer Process in the Remagnetization of a Thin Magnetic Film by Rotation"

Moscow, Tonkiye Ferromagnitnyye Plenki (Thin Ferromagnetic Films), Computer Center of the Academy of Sciences USSR, Moscow, 1970, pp 52-56

Abstract: The process of energy transfer from a coil creating a field along the axis of difficult magnetization to a coil connected with the component of the flow along the axis of easy magnetization is studied. It is assumed that the film is magnetized before saturation so that a one-domain structure is formed. A field is applied to the film at the initial time along the axis of difficult magnetization by passing a current I_T through a coil with a number of windings ω_T, the axis of which coincides with the axis of difficult magnetization. It is also assumed that there is a coil with a number of windings ω_R, the axis of which is along the axis of easy magnetization, and that this coil is loaded with the resistance R_R. The equation for remagnetization of the film by coherent rotation of the magnetization vector is given. The good agreement found between the shapes of the theoretical and experimental

USSR

KOROL'KOV, N. V., and TSAGARELI, D. V., Tonkiye Ferromagnitnyye Plenki, Computer Center of the Academy of Sciences USSR, Moscow, 1970, pp 52-56

characteristics for a sufficiently large segment of the remagnetization time leads the authors to hypothesize that although this equation describes processes of the rotation of the magnetization vector, it can be applied with a satisfactory degree of accuracy to those processes where processes of motion of the domain walls occur in addition to rotation of the magnetization vector. Since the coefficient of viscosity α depends on the properties of the film and remagnetization conditions, it was determined for each specific case of load resistance by substituting the maximum amplitude of the output voltage into the equation obtained for the output voltage. A graph of the coefficient α as a function of the mean remagnetization time shows that with a decrease in remagnetization time, α tends to a constant value, and with a remagnetization time corresponding to purely coherent rotation α will be a constant value.

2/2

USSR

UDC 629.78.015.4

KOROL'KOV, O. N., YELATONTSEVA, I. V.

"Approximate Method of Optimization of Structures with Honeycomb Filling"

Tr. Kuybyshev. Aviats. In-t. [Works of Kuybyshev Aviation Institute], 1971, Vol 54, pp 9-15. (Translated from Referativnyy Zhurnal Raketostroyeniye, No 1, 1972, Abstract No 1.41.168 by T. A. Ye.)

Translation: The specifics of the method suggested for determining the parameters of 3-layer plates and shells optimal from the standpoint of weight consists in that only the condition of strength of an ideally shaped structure is used in optimization. These conditions are not related to the initial irregularities and it is not necessary to assume any magnitude for them. The influence of irregularities of the actual structure on its strength is considered by introduction of correcting factor $\alpha<1$ to all strength conditions used. This factor is determined by comparing the calculated data with the results of strength testing of similar structures. 2 figs, 5 biblio refs.

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UDC: 621.382.3

USSR

ALFEROV, Zh. I., KOROL'KOV, V. I., NIKITIN, V. G., and YAKOVENKO, A. A., A. F. Ioffe Physico-Technical Institute, Leningrad

"Investigating Electroluminescent p-n-p-n Structures Using GaAs-$Al_xGa_{1-x}As$ Heterojunctions"

Leningrad, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp 1300-1305

Abstract: This is an experimental paper designed to determine the electrical, electroluminescent, and junction characteristics of four-layer structures using heterojunctions of the following types: p-$Al_xGa_{1-x}As$--n-$Al_xGa_{1-x}As$--p-GaAs--n-$Al_xGa_{1-x}As$, and n-$Al_xGa_{1-x}As$--p-$Al_xGa_{1-x}As$--n-GaAs--p-$Al_xGa_{1-x}As$, p-n-p-n structures in which one of the basic regions is of a narrow-zone material. The methods of growing such structures are discussed and a description of the preparation of the specimens is given together with a table of characteristics of the structure types. With regard to the volt-ampere characteristics, the authors discuss two types of mechanism for the increase in α with increasing current, and curves are plotted for the switching voltages and currents as functions of the temperature. For the electroluminescent characteristics of

USSR

ALFEROV, Zh. I., et al, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp 1300-1305

the structures, curves are plotted for the radiation recombination spectra for various current densities and for the radiation intensity as a function of the current. Appreciation is expressed to to V. M. Tuchkevich for his interest in the work, and to G. A. Andreyev, N. A. Nikitina, and V. P. Dvortsova for their assistance in preparing the specimens and making the measurements.

2/2

USSR

UDC 621.382.3

ALFEROV, ZH. I., ANDREYEV, V.M., KORCL'KOV, V.I., NIKITIN, V.G., PORTNOY, YE.L., YAKOVENKO, A.A. [Physico-Technical Institute imeni A.F. Ioffe, Academy Of Sciences, USSR, Leningrad]

"Recombination Radiation In Four-Layer Structures On The Base Of GaAs-AlAs Heterojunctions"

Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 739-741

Abstract: In a previous paper by the authors (less Ye. L. Portnoy) [Fizika i tekhnika poluprovodnikov, 4, 578 (1970)] it is shown that p-n-p-n structures based on the wide-band compounds $A^{III}B^{V}$ with direct optical transitions make it possible to obtain a light source with an S-shaped voltampere characteristic. The radiative and electrical characteristics of such structures can be significantly improved by the use of heterojunctions because, owing to the increase of effectiveness of the emitter junctions and the favorable conditions for derivation of radiation, the possibility is revealed of obtaining low-threshold coherent radiation. The present paper considers p-n-p-n structures based on heterojunctions in the system GaAs--AlAs, in which one of the base regions is narrow-band. The four-layer structures were obtained by epitaxial building-up from the fluid phase. Use of wide-band emitters realizes unilaterial injection in the base regions and a 1/2

USSR

ALFEROV, ZH.I., et al, Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 739-741

reduction of the current density necessary for creation of population inversion in the narrow-band base region is achieved, both by a decrease of the recombination losses in the wide-band base and by a decrease in thickness of the most active layer, the narrow-band base. Typical radiation spectra are presented of a four-layer heterostructure with a narrow-band base of p-type conductivity at 77 and 300° K. The authors thank S.G. Konnikov for conducting microroentgenospectroscopic analysis and V. M. Tuchkevich for interest and attention to the work. 3 fig. 3 ref. Received by editors, 20 July 1971.

2/2

UDC 621.315.592

USSR

ALFEROV, Zh. I., KOROL'KOV, V. I., NIKITIN, V. G., and TRET'YAKOV, D. N.

"Solid-State Infrared Radiation Converter"

Leningrad, Fizika i tekhnika poluprovodnikov, Vol 5, No 8, 1971, pp 1503-1507

Abstract: The work described in this article is based in part upon earlier articles by the same authors in the same journal (Vol 4, 1970, p 578, and Vol 4, 1970, p 2035) in which it was shown that GaAs diodes with an S-shaped volt-ampere characteristic are sensitive to infrared radiation, and that p-n-p-n structures emit visible light when switched to conduct. The present article describes experiments performed on the four-layered structures of n-$Al_xGa_{1-x}As$--p-$Al_xGa_{1-x}As$--si-GaAs--p-$Al_xGa_{1-x}As$, solid-state converters in which the infrared-sensitive si region acts as the sensor. A description is given of how this four-layered structure is obtained. The specimens used in the experimentation were rectangular, with an area of 0.1-0.3 mm^2, and their switching voltage, which increased with increased thickness of the semiinsulating region, was from 20-80 volts. An oscillogram of the forward section of the device's volt-ampere characteristic is reproduced, the volt-ampere characteristics of the device before switching are plotted for

USSR

ALFEROV, Zh. I., et al., Fizika i tekhnika poluprovodnikov, Vol 5, No 8, 1971, pp 1503-1507

several different temperatures, and the spectra for the n-p-si-p structure recombination radiation at 300°K are given. The authors express their thanks to V. M. Tuchkevich for his interest in the work, and to N. A. Nikitina and V. P. Dvortsova for their help in preparing the specimens and making the measurements. They are associated with the A. F. Ioffe Physico-Technical Institute of Leningrad.

1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--P-N-P-N STRUCTURE IN GALLIUM ARSENIDE AND AL SUBX GA SUB1 NEGATIVE X AS SOLID SOLUTIONS -U-

AUTHOR-(05)-ALFEROV, ZH.I., ANDREYEV, V.M., KOROLKOV, V.I., NIKITIN, V.G., YAKOVENKO, A.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. PRLUPROV. 1970, 4(3), 578-81

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SOLID SOLUTION, GALLIUM ARSENIDE, ALUMINUM ARSENIDE, RADIATION SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1713 STEP NO--UR/0449/70/004/003/0578/0481

CIRC ACCESSION NO--AP0120425
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 018

CIRC ACCESSION NO--AP0120425

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE P-N-P-N LAYERED SWITCHING STRUCTURES IN GAAS AND GAAS-ALAS SOLID SOLNS. WERE STUDIED. LIQ. EPITAXY IN OPEN SYSTEM AT 900-1000DEGREES AND IN H SUB2 FLOW WAS USED FOR PREPG. THE STRUCTURES ON N-GAAS SUBSTRATES, DOPED WITH ZN (P EQUALS 4 TIMES 10 PRIME19 CM PRIME NEGATIVE3). ON THE SUBSTRATE, 2 BASE LAYERS AND 1 N TYPE EMITTER LAYER (N EQUALS (6-9) TIMES 10 PRIME18 CM PRIME NEGATIVE3) WERE GROWN, THE MIDDLE P AND N LAYERS BEING ZN DOPED AND NONDOPED, RESP. CONCN. AT THE JUNCTIONS WERE CHECKED BY VOLTAGE CAPACITANCE EXPTS., AND THEN V-I CHARACTERISTICS WERE EXAMD. AT VARIOUS TEMPS. SWITCHING ON VOLTAGE AT ROOM TEMP. WAS 20-150 V AND INCREASED WITH THE TEMP. RISE AS WELL AS THE SWITCHING ON CURRENT. THERMAL GENERATION IN THE SPACE CHARGE LAYER CONTROLLED THE CURRENT. THE SWITCHED ON GAAS SAMPLES EMITTED IR RADIATION OF 1.37 EV ENERGY (MAX.) AT ROOM TEMP. INTENSITY OF THE RECOMBINATION RADIATION INCREASED LINEARLY WITH THE CURRENT. THE RADIATION SPECTRA OF THE AL SUBX GA SUB1 NEGATIVE X AS STRUCTURES AT 300DEGREESK SHOWED 2 LONG WAVE BANDS WITH MAX. AT 1.37 AND 1.42 EV AND 1 SHORT WAVE BAND AT 1.8 EV. NATURE AND ORIGIN OF THE BANDS ARE DISCUSSED. SWITCHING TIMES DID NOT EXCEED 20-30 NSEC AS FOUND FROM PULSED MEASUREMENTS. FACILITY: FIZ.-TEKH. INST. IM. IOFFE, LENINGRAD.

UNCLASSIFIED

USSR UDC: 538.4

KOROL'KOV, V. L., MEL'NIKOV, M. A.

"Investigation of the Resistance of a Stream of Explosion Products From Secondary Explosives"

V sb. Ispol'z. vzryva v nar. kh-ve. Ch. 1 (Use of Blasting in the National Economy. Part 1--collection of works), Kiev, "Nauk. dumka", 1970, pp 83-91 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B58)

Translation: The authors study the change with distance in the electrical resistance of a stream of expanding products of explosion of an explosive charge as a function of the mass and density of the explosive, as well as the percent concentration of additives -- aluminum, NaCl and glass. PETN and RDX charges were used with weights in the range of 1.7-2.5 g and particle sizes of less than 0.1 mm. The charges were pressed into a polystyrene shell with wall thickness of 5 mm open at one end. The detonation was initiated by the electropulse method, and the development of the detonation was recorded by a high-speed camera. Electrocontact pickups (trigger and measurement) were installed on the path of expansion of the pro-

1/3 - 53 -

KOROL'KOV, V. L., MEL'NIKOV, M. A., Ispol'z. vzryva v mar. kh-ve. Ch. 1, Kiev, "Nauk. dumka", 1970, pp 83-91

ducts of the explosion. The pickups were made from a copper tube 8 mm in diameter with a wall thickness of 1 mm filled with epoxy resin, and a steel rod along the center of the tube and extending 3 mm beyond the end of the tube. The outer electrode was grounded, and voltage was applied to the center electrode. The voltage drop was recorded on the OK-19 oscillograph with 20 μs scanning. Graphs are given for the resistance of explosion products as a function of the weight of the explosive charge and the charging density. The curves were obtained with the pickup located 100 mm from the charge. It is concluded that the resistance of the products of explosion increases linearly with an increase in charge weight, and remains constant with a change in density. It is deduced from this that the resistance of the products of explosion decreases as they expand, the maximum resistance being reached before the detonation wave passes through the charge. It is pointed out that as the percent concentration of the inert additive (glass) increases, there is a reduction in electrical resistance due to a reduction in the amount of the products of explosion and the pressure in them. The corresponding curve for resistance as a function of NaCl content lies below the curve with glass, which is attributed to dissociation of the NaCl molecules taking place with absorption of

2/3

KOROL'KOV, V. L., MEL'NIKOV, M. A., Ispol'z. vzryva v nar. kh-ve. Ch. 1, Kiev, "Nauk. dumka", 1970, pp 83-91

the energy of the products of explosion. The curve with aluminum has a maximum with a three percent aluminum concentration; in the authors' opinion, complete combustion of aluminum corresponds to this maximum under the conditions of the experiment. It is stated that the rules obtained for the change in resistance of the products of explosion were used in experiments on quenching of a high-current electrical discharge in the tank circuit of a capacitor charged from 5 to 15 kV.

Abstractor's Note: The conclusion of the authors concerning the fact that the electrical resistance of the products of explosion decreases as they expand from the charge and has a maximum before the detonation wave passes through the charge does not agree with the results of research by other authors, for instance with the measurements of conductivity of the products of explosion in detonation waves (see Dremin, A. N., Savrov, S. D., Trofimov, V. S., Shvedov, K. K., "Detonation Waves in Condensed Media", Moscow, "Nauka", 1970, RZh-Mekh, 1971, 5B21BK). O. K. Rozanov.

3/3

USSR

UDC 546.18:543.862.34

KOROL'KO, V. V., SHAROV, V. N., PRONS, V. N., and KLEBANSKIY, A. L., All Union Scientific Research Institute of Synthetic Rubber Imeni S. V. Lebedev

"Molecular Refraction of the Cyclotriphosphazene Grouping P_3N_3"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, pp 584-585

Abstract: A series of cyclotriphosphazenes with the general formula $(PN)_3Cl_x(CCH_2R^F)_{6-x}$, where $R^F = C_2F_5$, C_3F_7 and $x = 0$ to 6, has been synthesized and characterized. Molecular refraction of this grouping calculated by the formula $(MR_D)_G = (MR_D)_1 - (MR_D)_2$ is 15.23. $(MR_D)_1$ = molecular refraction from the formula of Lorentz-Lorenz, and $(MR_D)_2$ = molecular refraction of the substituents on cyclotriphosphazene.

1/1

UDC: 535.34

USSR

MAKHANEK, A. G., KOROL'KOV, V. S., and FEDOROV, A. F.

"Two-Photon Absorption in Molecules"

Minsk, Zhurnal Prikladnoy Spektroskopii, No 6, 1973, pp 1007-1014

Abstract: This article is the continuation of an earlier paper published in the journal named above by the first-named author (16, 1972, p 699) in which it was shown that the use of analytic methods of multiquantum processes for computing the various spectroscopic characteristics of atoms, excitons, and molecules was simple and effective. The present article considers an analytic solution for the problem of two-photon absorption of heteronuclear two-atom molecules described by the Kratzer and Morse potentials. It is assumed that the absorption occurs without a change in the basic electron term. On the basis of formulas obtained for the Morse potential, the cross section of the two-photon resonance absorption of light for the HCl molecule is computed. This value is found to be in close agreement with that computed by the authors using semiempirical values for the matrices of dipole moment elements. They thank P. A. Apanasevich for his comments on the results of the work.

1/1

UDC 658.4/.5-52:681.32(082)

USSR

KOROL'KOV, Ye. Ya. (Editor-in-Chief)

Upravleniye v chernoy metallurgii. (Sb. nauch. tr. VNII organiz. proiz-va i truda chern. metallurgii, vyp. 12) (Control in Ferrous Metallurgy (Collected Scientific Works of the All-Union Scientific Research Institute of Organization of Production and Labor in Ferrous Metallurgy, vyp. 12)), Moscow, Metallurgiya Press, 1970, 153 pp, ill., 71 k. (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6 A445 K)

Translation: This collection contains 17 papers on the following topics: improvement of control in ferrous metallurgy, organization of control of a metallurgical enterprise, the development of standards for the number of engineering, technical, and office personnel in the administration and in the shops, organizational structure of operative planning for automation by a digital computer, optimization of basic production plans of a metallurgical enterprise, technical and economic planning of energy balances and cost of energy forms of production at a metallurgical enterprise based on matrix models, processing the backlog of orders of a metallurgical enterprise on a digital computer, criteria and methods of solving operating planning problems, methods of estimating the intraplant planning of steelmaking, principles of studying and normalizing operations when organizing the control of metallurgical

1/2

USSR

KOROL'KOV, Ye. Ya., Upravleniye v chernoy metallurgii. (Sb. nauch. tr. VNII organiz. proiz-va i truda chern. metallurgii, vyp. 12) Control in Ferrous Metallurgy (Collected Scientific Works of the All-Union Scientific Research Institute of Organization of Production and Labor in Ferrous Metallurgy, vyp. 12)), Moscow, Metallurgiya Press, 1970, 153 pp, ill., 71 k, (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6 A445 K)

projects, study of the structure of a complex of interrelated operations, mathematical model and computer algorithm for optimal planning for rolled-product production, calculations of energy balances and costs on the Minsk-22 digital computer, mathematical methods of solving the problems of laying out the metal in the control system for rolled-product production, a ferrous metallurgy production classifier — the basis for applying computer engineering for planning and improvement of the organization of accounting for raw materials and basic materials with the application of computer engineering at the Zaporozhstal' Plant, technical equipment of the system for accounting for raw materials and basic materials (using the example of the Zaporozhstal' Plant), and labor hygiene ferrous metallurgy enterprises.

2/2

UDC 599.537:591.127

USSR

GUREVICH, V. S. and KOROL'KOV, Yu. I., Institute of Developmental Biology, Academy of Sciences USSR, and First Aid Institute imeni N. V. Sklifosovskiy, Moscow

"X-ray Study of Respiratory Movements in the Common Dolphin (Delphinus delphis)"

Moscow, Zoologicheskiy Zhurnal, No 5, 1973, pp 786-789

Abstract: X-ray examination of three adult dolphins showed that the breathing opening and supracranial nasal passage are sharply dilated in the course of inspiration and expiration, but the air sacs do not fill, although air is present in the bony nasal passages and larynx. The lumen of the unpaired supracranial nasal passage changes little between successive respiratory movements, but it clearly widens at the time of the next inspiration. Since the air sacs do not fill between two respiratory movements and consequently do not participate in respiration, it is conjectured that these structures perform a different function.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201510009-1"

1/2 034 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--THE USE OF INTESTINAL TRANSPLANT FOR REVASCULARIZATION AND REINNERVATION OF ORGANS OF THE URINARY SYSTEM IN CHILDREN -U-
AUTHOR-(03)-DOLETSKIY, S.YA., KOROLKOVA, I.A., KORABLEVA, L.K.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 4, PP 140-145

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEDIATRICS, TISSUE TRANSPLANT, KIDNEY, LARGE INTESTINE, SMALL INTESTINE, HYPERTENSION, SURGERY, IMMUNITY, TISSUE REGENERATION, ORGAN REGENERATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1235 STEP NO--UR/0531/70/000/004/0140/0145

CIRC ACCESSION NO--AP0054130
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--18SEP70

2/2 034

CIRC ACCESSION NO--AP0054130

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ENTERO AND COLORENOPEXY WAS CARRIED OUT IN CHILDREN SUFFERING FROM NEPHROGENIC HYPERTENSION ASSOCIATED WITH CHRONIC PYELONEPHRITIS, WHERE THE PRINCIPAL PATHEOGENETIC CHAIN WAS ISCHEMIA OF THE RENAL TISSUE DEVELOPING AS THE RESULT OF NEPHROSCLEROSIS. THE USE OF A GRAFT FROM THE LARGE INTESTINE IN THIS GROUP OF PATIENTS IS MORE ADVANTAGEOUS THAN THAT FROM THE SMALL INTESTINE DUE TO THE GREATER SURFACE OF THE OPENED SEGMENT, THIS ENABLING WITHOUT DIFFICULTY TO COVER THE WHOLE KIDNEY. THE SECOND GROUP COMPRISED CHILDREN WITH NEUROGENIC DISORDERS OF URINATION AS THE RESULT OF CENTRAL OR AUTONOMIC DISTURBANCES OF VESICAL INNERVATION. THE AUTHORS OPERATED 33 CHILDREN WHO WERE SUBJECTED TO 41 OPERATIONS OF ENTER4 OR COLOPEXY, OF THIS NUMBER 14 PATIENTS WITH NEPHROGENIC HYPERTENSION AND 16, WITH NEUROGENIC URINARY BLADDER. A DETAILED DESCRIPTION OF THE TECHNIQUE OF DEMUCOSATION OF THE INTESTINAL GRAFTON THE OPENED SEGMENT IS GIVEN. THE RESULTS OBTAINED IN BOTH GROUPS OF PATIENTS ARE SUFFICIENTLY PROMISING, THIS GIVING GROUNDS FOR HOPE OF WIDER USE OF THE REFERRED TO TECHNIQUE, CONSIDERING THE IMMATURITY OF TISSUES AND ORGANS OF THE CHILDS ORGANISM, CAPABLE OF INTENSIVE REGENERATIVE PROCESSES.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

1/2 013

TITLE--CATHODIC REDUCTION OF LEAD DIOXIDE. II. REDUCTION OF ALPHA LEAD DIOXIDE IN ALKALI SOLUTIONS -U-

AUTHOR-(03)-LYAMINA, L.I., KOROLKOVA, N.U., GORBUNOVA, K.M.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(3), 394-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION MECHANISM, CHEMICAL REDUCTION, LEAD OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0364/70/006/003/0394/0397

PROXY REEL/FRAME--1998/1137

CIRC ACCESSION NO--AP0121696

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 013

CIRC ACCESSION NO--AP0121696

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECHANISM OF PBO SUB2 CATHODIC REDN. WAS STUDIED IN 0.1-7N KOH SOLNS. BY CHARGING CURVE METHOD. THE ALPHA PBO SUB2 DEPOSIT OBTAINED ON THE ANODE FROM ALK. PLUMBITE ELECTROLYTE WAS SUBJECT TO REDN., ITS EXACT COMPN. BEING PBO SUB1.91. THE REDN. PROCESS PROCEEDED IN 2 STAGES; THE 1ST (AT C.DS. OF 0.5-2 MA-CM PRIME2) WAS ASSOCD. WITH THE FORMATION OF AN INTERMEDIATE OXIDE OF COMPN. PBO SUB1.39 INDEPENDENTLY OF THE KOH CONCN. ON ATTAINING THIS STATE THE POTENTIAL INCREASED SHARPLY TO 0.56 V CORRESPONDING TO THE REDN. OF THIS OXIDE TO PB. MEASUREMENTS OF THE COMPONENTS OF IMPEDANCE DURING POLARIZATION OF THE ELECTRODE UNDER GALVANOSTATIC CONDITIONS REVEALED THAT THE REDN. STARTED AT THE PBO SUB2 ELECTROLYTE INTERFACE AND THEN PROCEEDED AT 2 INTERFACES (PBO SUB2 ELECTROLYTE AND INTERMEDIATE OXIDE); AS A RESULT, THIS PROCESS WAS ACCOMPANIED BY A CONCN. POLARIZATION IN THE INTERMEDIATE OXIDE PHASE. FACILITY: INST. FIZ. KHIM., MOSCOW, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--THIAZOLYL KETONE DERIVATIVES AS ANALYTICAL REAGENTS. V. REACTION OF DIHYDROXYTHIAZO AND TUNGSTEN IN WATER ETHANOL SOLUTIONS -U-

AUTHOR-(03)-KORCLKOVA, V.S., PUTNINS, J., GUDRINIECE, E.

K

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 76-80

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THIAZOLE, KETONE, TUNGSTEN COMPOUND, COMPLEX COMPOUND, HYDROXYL RADICAL, ANALYTIC CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1671 STEP NO--UR/0464/70/000/001/0076/0080

CIRC ACCESSION NO--AP0125292
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 011

CIRC ACCESSION NO--AP0125292

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A 1:2 COMPLEX OF W AND DIHYDROXYTHIAZO(2,(3,4,DIHYDROXYPHENYLAZO)4,PHENYL,5,BENZOYLTHIAZOLE) HAD AN ABSORPTION MAX. AT 540 M MU AT PH 4.0-5.5. BEER'S LAW WAS OBEYED FOR 1.0-35.0 MU G W-ML. THE MOLAR ABSORPTIVITY WAS 7.0 TIMES 10 PRIME4. ERRORS CAUSED BY VARIOUS IONS ARE TABULATED. FACILITY: RIZH. POLITEKH. INST., RIGA, USSR.

UNCLASSIFIED

UDC 612.825.261

USSR

KOROL'OVA, A. Ye., and FOYA, N. M., Division of the Pathology of Higher Nervous Activity and Laboratory of the Pathology of the Nervous System, Institute of Physiology imeni A. A. Bogomolets, Academy of Sciences Ukrainian SSR, Kiev

"Disorders of Short-Term Memory in Dogs With Injured Frontal Lobes of the Brain"

Kiev, Fiziologichniy Zhurnal, Vol 19, No 3, May/Jun 73, pp 303-309

Abstract: The short-term memory of dogs with various degrees of injury to the frontal lobes was studied on the basis of visual perception of food location. It was established that the field F_2 according to the classification of Adrianov and Mering was mainly responsible for the disturbance of delayed responses. This disturbance increased with an increasing extent of the site of the injury. The disturbance could not be ascribed solely to a deterioration of the kinesthetic gnosis; it was based on a low level of trace excitement and of the perservation phenomenon and also, at a simultaneous injury to the proreal and anterior sygmoid gyrus, to a far-reaching destruction of the collation apparatus. In connection with this, the ability to consider the results of a completed action was lost.

1/1

USSR

UDC 539.215:532.5

KOROLYEV, V. N. and SYROMYATNIKOV, N. I., (Ural Polytechnic Institute imeni S. M. Kirov, Sverdlovsk)

"Quasi-Liquid Flow Around Bodies"

Moscow, Doklady Akademii Nauk SSSR, Vol 203, No 1, Mar-Apr 72, pp 58-59

Abstract: Structural-hydrodynamic characteristics of quasi-liquid media near bodies such as spheres, cylinders, plates and wedges in a layer of micro-granular chamotte fluidized by air are investigated, using x-ray photography. The results show that the flow critical conditions and the velocity of disturbances propagation in fluidized media are different from those calculated from the average values.

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USSR K UDC 616-002.71-076.73

KOROLYUK, A. M., SOMOV, G. P.

Acc. Nr: AP0036825 K Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 1, pp 106-111

UTILIZATION OF THE REACTION OF INHIBITION OF INDIRECT HEMAGGLUTINATION FOR THE STUDY AND LABORATORY DIAGNOSIS OF PSEUDOTUBERCULOSIS (FAR-EASTERN SCARLATINA-LIKE FEVER)

A. M. Korolyuk, G. P. Somov, T. A. Shumapova

The authors elaborated a method of reaction of inhibition of indirect hemagglutination for indication and titration of Bacillus pseudotuberculosis antigens. Determination of the antigens in bacterial suspensions demonstrated the high sensitivity and specificity of this method. Utilization of immune sera with a definite antibody spectrum for the mentioned reaction offered a possibility of differential titration of type and group Bacillus tuberculosis antigens. P. pseudotuberculosis rodentium antigen was revealed in the feces (46%) and urine (31%) of patients, with the aid of reaction of inhibition of indirect hemagglutination.

This technique is recommended as an express method for laboratory diagnosis of pseudotuberculosis.

6

USSR

KOROLYUK, A. P., ROY, V. F., Institute of Radio Physics and Electronics, Academy of Sciences of the Ukrainian SSR

"'Giant' Oscillations of Acoustoelectric Current"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 17, No 4, 20 Feb 73, pp 184-186

Abstract: The acoustoelectric effect is observed and studied in a conductor (bismuth single crystal with $R_{292}/R_{4.2} \approx 300$) at liquid helium temperatures. The studies were done on frequencies of 165 and 500 MHz at temperatures from 4.2 to 1.5°K. In magnetic fields up to $2.337 \cdot 10^6$ amp/m quantum oscillations of acoustoelectric current are observed, including "giant" oscillations. A new method is proposed for studying the electric spectrum of carriers in the conductor, which enables unique determination of the sign of the effect. The experiment is arranged so that the magnetic field vector can be rotated through π radians relative to the sound vector in the plane of the binary and bisector axes of the crystal. The maximum electroacoustic effect measured in the experiments was $5 \cdot 10^{-6}$ V·cm^2·W^{-1} when the intensity of the acoustic flux was 0.01 W·cm^2.

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USSR

UDC 621.315.592

KOROLYUK, A. P., ROY, V. F.

"Acoustomagnetoelectric Effect in Tellurium"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 556-558

Abstract: It was demonstrated previously by E. M. Epshteyn, et al. [FTT, No 9, 376, 1967] that the acoustomagnetoelectric effect is possible in semiconductors with monopolar conductivity. The physical picture of its occurrence arose from scattering of the electrons with respect to energies, the dependence of their relaxation time (with respect to pulse) on the energy and the fact that the sonic flow and the electric field deform the distribution function of the electrons differently. The directional "partial currents" equal with respect to magnitude and opposite in direction, the mean electron energy in which is different, are deflected differently in the magnetic field as a result of which a transverse potential difference occurs. In the present article results are presented from experiments with monocrystalline tellurium alloyed with antimony with p-type conductivity (at a temperature $T < 100^\circ$ K). X-cut samples $6 \times 6 \times 2$ mm were prepared from single crystals with carrier concentrations at helium temperatures of $p = 5 \cdot 10^{13}$ and $p = 2 \cdot 10^{14}$ cm^3. The prepared sample was attached by acoustic binding to a buffer of monocrystalline Z-section quartz.
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USSR

KOROLYUK, A. P., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 556-558

The same procedure was used to attach a piezoacoustic longitudinal wave converter to the opposite side of the buffer made of a lithium niobate plate with a fundamental frequency of 95 megahertz. The converter was excited to the third harmonic, and the studies were performed at the temperatures of liquid nitrogen and helium. A graph is presented showing the magnitude of the acoustomagnetoelectric effect U_{AME} as a function of the magnetic field intensity H obtained at both temperatures. The function is linear and corresponds to the expression for the U_{AME} field obtained earlier. Another figure is presented showing the angular dependence of the projection of the U_{AME} vector in the direction of the trigonal axis (the probing electrodes are located along the trigonal axis) as a function of the direction of the vector H in the plane of the trigonal and bisector axes. E_{AME} changes sign on variation of the direction of the magnetic field which reaches a maximum for H perpendicular to the trigonal axis.

2/2

USSR

UDC 621.315.592

DEMIDENKO, L. S., KOROLYUK, S. L., SAMOYLOVICH, A. G., CHELOVA, T. N.

"Transverse Reluctance of n-Ge in Quantizing Magnetic Fields"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 339-344

Abstract: A study was made of a method of calculating the transverse reluctance of n-Ge in quantizing magnetic fields for sufficiently pure samples and it is possible to consider that the scattering takes place only on acoustic phonons. The calculation method is based on the oscillator center drift method generalizing the calculations of V. L. Gurevich, et al. [ZhETF, No 40, 199, 1961] to the case of anisotropic mass. Good agreement between the calculated data and experimental results is demonstrated. For different directions of the magnetic field, a different field dependence is observed which is connected with the intertrough redistribution of the electrons. An interesting feature of the anisotropic scattering of the electrons in n-Ge is the primary contribution of the transverse phonons to the mobility and the increase in this contribution with an increase in the magnetic field. The divergence of the experimental data of J. W. Gallagher, et al. [Phys. Rev., No 161, 793, 1967] with the theoretical calculations presented here decreases with an increase in the magnetic field and when H = 170 kilooersteds, it is about 40%. The divergence is assumed to be caused primarily by the large number of impurities in the samples.

1/1

USSR

BASS, F. G., BARANSKIY, P. I., GUREVICH, YU. G., KOROLYUK, S. I., POTYKEVICH, I. V., SAMOYLOVICH, A. G.

"All-Union Conference on the Physics of Semiconductors in Strong Magnetic and Electric Fields"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 5, No 3, March 1971, pp 587-591

Abstract: This article contains brief reviews of the reports given at the All-Union Conference on the Physics of Semiconductors in Strong Magnetic and Electric Fields and held by the Scientific Council on Physics and Chemistry of Semiconductors of the USSR Academy of Sciences, the Institute of Physics of Metals of the USSR Academy of Sciences and the Problem Scientific Research Laboratory of Anisotropic Semiconductors of the Chernovtsy State University from 14 to 17 October 1970, in Chernovtsy.

The reports were concentrated around the following problems: 1) kinetic phenomena in semiconductors in strong magnetic fields; 2) kinetic and optical phenomena in strong electric and magnetic fields; 3) electron-hole plasma in strong electric and magnetic fields; 4) electric instabilities

USSR

BASS, F. G., et al., Fizika i Tekhnika Poluprovodnikov, Vol 5, No 3, March 1971, pp 587-591

in strong fields; 5) dimensional effects and volt-ampere characteristics. Seventy-six reports were given. The next conference, which will be participated in by the member countries of the CEMA, will be held in September-October 1971, in Leningrad.

2/2

1/2 007 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--GENESIS OF SALTS IN NATURAL WATERS OF THE IMOLGA RIVER BASIN IN THE BURYAT ASSR -U-

AUTHOR--KOPELYUK, T.V.

COUNTRY OF INFO--USSR

SOURCE--PEDOLOGIYA 1970, (4), 25-34

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CIAC ACCESSION NO--AP0134393

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHEM. AND MINERALOGICAL CHARACTERISTICS OF THE NATURAL WATERS OF THE REGION ARE STATED. THE LOWEST MINERALIZATION (4 MEQUIV-L.) IS DISPLAYED BY THE WATERS OF THE NORTHERN WATERSHED, THE HIGHEST (251 MEQUIV-L.) BY THOSE NEAR THE TECTONICLINE IN THE UPPER PART OF THE BASIN. A STATISTICAL ANAL., BASED ON THE CHEM. COMPN. OF THE WATER, SHOWED THAT THE MINERALIZATION WAS THE RESULT OF RECENT CONTINENTAL SALT ACCUMULATION PROCESSES. IN SOME PLACES THE GROUND WATER IS FED BY MINERALIZED SUBSURFACE SOLNS., AS REVEALED BY THE SHARP INCREASE IN THE CONTENT OF MGCL SUB2, CACL SUB2, NACL, AND NA SUB2, SO SUB4. FACILITY: PUCHV. INST. IM. DOKUCHAEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 577.4

VALAKH, V. Ya. and KOROLYUK, V. S.

"Stochastic Automatons With Random Reaction Time and Their Operation in Random Media"

Moscow, V sb. Avtomaty, gibridn. i upravlyayushch. mashiny (Automatons, Hybrid and Control Machines--collection of works) "Nauka," 1972, pp 38-45 (from RZh--Matematika, No 7, 1972, Abstract No 7V371)

Translation: Given, a stochastic automaton with a finite number of states $\varphi_1, \varphi_2, \ldots, \varphi_n$ and two inputs S_0 and S_1. For both inputs S_α ($\alpha = 1,2$) a matrix of transition probabilities $\|P_{ij}^{(\alpha)}\|$ is specified which determines, for each state φ_j of the automaton, the probability of its transition to state φ_j under the action of the input S_α. For any state of the automaton some action (output) f_k ($k \leq n$) is determined, i.e., $f_{ki} = F(\varphi_i)$, where $k_i = 1,2,\ldots,k$.

1/2

USSR

VALAKH, V. YA., and KOROLYUK, V. S., V sb. Avtomaty, gibridn, i upravlyayushch, mashiny, "Nauka," 1972, pp 38-45

The operation of such an automaton is considered for the case of continuous time in which, for each of the n states, the time the automaton remains in it is the random quantity ξ_i $(1 \leqslant i \leqslant n)$. The magnitude of ξ is naturally considered as the time of the automaton's reaction to the input variable or to the preceding state of the automaton; the latter itself is then referred to as an automaton with random reaction time. In this paper, using semi-Markov processes, the authors investigate the problem of optimality in the behavior of than automaton with random reaction time. Using a specific example (an automaton with linear tactics) they find a solution for the problem of those conditions under which the values α_i (the average reaction time of the automaton) are satisfied if the behavior of the automaton in a random medium is to be asymptotically optimal. In this paper a solution is also found for the problem of the average time the automaton remains in a set of states with minimum penalty, and formulas are obtained for determining the average number of penalties at the input to an automaton with linear tactics for a limited interval of time. Author's abstract.

2/2

USSR

UDC 577.4

VALAKH, V. YA., KOROLYUK, V. S.

"Stochastic Automata with a Random Reaction Time and Their Functioning in Random Media"

V sb. Avtomaty, gibridn. i upravlyayushch. mashiny (Automata, Hybrid and Control Machines — collection of works), Moscow, Nauka Press, 1972, pp 38-45 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V37E)

Translation: There is a stochastic automaton with a finite number of states $\phi_1, \phi_2, \ldots, \phi_n$ and two inputs S_0 and S_1. For both inputs S_α ($\alpha = 1, 2$), the transition probability matrix $\|p_{ij}^{(\alpha)}\|$ is given which for each of the states of the automaton φ_j defines the probability of its transition to the state ζ_j under the effect of the input S_α. For any state of the automaton, an effect (output) is defined f_k ($k \leq n$), that is, $f_{k_i} = F(\phi_i)$ where $k_i = 1, 2, \ldots, k$.

A study was made of the operation of this automaton in the case of continuous time when for each of the n states the time the automaton is in it is a random variable ξ_i ($1 \leq i \leq n$). The value of ξ is, of course, considered as the reaction time of the automaton to the incoming value of the input variable.

1/2

USSR

VALAKH, V. YA., et al., Avtomaty, gibridn. i upravlyayushch. mashiny, Moscow, Nauka Press, 1972, pp 38-45

or the preceding state of the automaton, and in this case the automaton itself is called an automaton with a random reaction time. In this paper, the apparatus of semimarkov processes is used to study the problem of expediency in the behavior of the automaton with a random reaction time. In the specific example (an automaton with linear tactics), the problem is solved as to what conditions the values of α_i (the mean reaction times of the automaton) must satisfy in order that the behavior of the investigated automaton in a random medium be asymptotically optimal. In the paper, the problem of the mean time the automaton is in a set of states with minimum penalty is solved, and formulas are obtained for determining the mean number of penalties at the input of the automaton with linear tactics in a limited time interval.

2/2